

SEQUENCE LISTING

<110> Curagen
RASTELLI, LUCA

<120> NOVEL SPHINGOSINE KINASES AND NUCLEIC ACIDS ENCODING
SAME

<130> 10716-7

<140> NOT ASSIGNED

<141> 2001-02-14

<150> 60/182,360

<151> 2000-02-14

<150> 60/191,261

<151> 2000-03-22

<160> 15

<170> PatentIn Ver. 2.1

<210> 1

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<212> DNA

<213> Homo sapiens

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<210> 2

<211> 384

<212> PRT

<213> Homo sapiens

<400> 2

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Leu Phe Arg Ser His Val Gln Pro Leu Leu Ala Glu Ala Glu Ile Ser
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Phe Thr Leu Met Leu Thr Glu Arg Arg Asn His Ala Arg Glu Leu Val
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Arg Ser Glu Glu Leu Gly Arg Trp Asp Ala Leu Val Val Met Ser Gly
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Asp Gly Leu Met His Glu Val Val Asn Gly Leu Met Glu Arg Pro Asp
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Trp Glu Thr Ala Ile Gln Lys Pro Leu Cys Ser Leu Pro Ala Gly Ser
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Gly Asn Ala Leu Ala Ala Ser Leu Asn His Tyr Ala Gly Tyr Glu Gln
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Val Thr Asn Glu Asp Leu Leu Thr Asn Cys Thr Leu Leu Leu Cys Arg
    130                      135                      140

Pro Val Leu Ser Pro Met Asn Leu Leu Ser Leu His Thr Ala Ser Gly
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Leu Arg Ser Phe Ser Val Leu Ser Leu Ala Trp Gly Phe Ile Ala Asp
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<210> 3

<211> 1759

<212> DNA

<213> Mus musculus

<400> 3

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<211> 382

<212> PRT

<213> Mus musculus

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35 40 45

Phe Lys Leu Ile Leu Thr Glu Arg Lys Asn His Ala Arg Glu Leu Val
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Cys Ala Glu Glu Leu Gly His Trp Asp Ala Leu Ala Val Met Ser Gly
65 70 75 80
Asp Gly Leu Met His Glu Val Val Asn Gly Leu Met Glu Arg Pro Asp
85 90 95
Trp Glu Thr Ala Ile Gln Lys Pro Leu Cys Ser Leu Pro Gly Gly Ser
100 105 110
Gly Asn Ala Leu Ala Ala Ser Val Asn His Tyr Ala Gly Tyr Glu Gln
115 120 125
Val Thr Asn Glu Asp Leu Leu Ile Asn Cys Thr Leu Leu Leu Cys Arg
130 135 140
Arg Arg Leu Ser Pro Met Asn Leu Leu Ser Leu His Thr Ala Ser Gly
145 150 155 160
Leu Arg Leu Tyr Ser Val Leu Ser Leu Ser Trp Gly Phe Val Ala Asp
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Val Asp Leu Glu Ser Glu Lys Tyr Arg Arg Leu Gly Glu Ile Arg Phe
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Thr Val Gly Thr Phe Phe Arg Leu Ala Ser Leu Arg Ile Tyr Gln Gly
195 200 205
Gln Leu Ala Tyr Leu Pro Val Gly Thr Val Ala Ser Lys Arg Pro Ala
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Ser Thr Leu Val Gln Lys Gly Pro Val Asp Thr His Leu Val Pro Leu
225 230 235 240
Glu Glu Pro Val Pro Ser His Trp Thr Val Val Pro Glu Gln Asp Phe
245 250 255
Val Leu Val Leu Val Leu Leu His Thr His Leu Ser Ser Glu Leu Phe
260 265 270
Ala Ala Pro Met Gly Arg Cys Glu Ala Gly Val Met His Leu Phe Tyr
275 280 285
Val Arg Ala Gly Val Ser Arg Ala Ala Leu Leu Arg Leu Phe Leu Ala
290 295 300

Met Gln Lys Gly Lys His Met Glu Leu Asp Cys Pro Tyr Leu Val His
305 310 315 320

Val Pro Val Val Ala Phe Arg Leu Glu Pro Arg Ser Gln Arg Gly Val
325 330 335

Phe Ser Val Asp Gly Glu Leu Met Val Cys Glu Ala Val Gln Gly Gln
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<210> 5

<211> 1840

<212> DNA

<213> Homo sapiens

<400> 5

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Leu Thr Ser Arg Pro Lys His Leu Leu Val Phe Ile Asn Pro Phe Gly
 50 55 60
 Gly Lys Gly Gln Gly Lys Arg Ile Tyr Glu Arg Lys Val Ala Pro Leu
 65 70 75 80
 Phe Thr Leu Ala Ser Ile Thr Thr Asp Ile Ile Gly Asn Lys Phe Tyr
 85 90 95
 Val Asn Tyr Val Glu Val Ile Thr Glu His Ala Asn Gln Ala Lys Glu
 100 105 110
 Thr Leu Tyr Glu Ile Asn Ile Asp Lys Tyr Asp Gly Ile Val Cys Val
 115 120 125
 Gly Gly Asp Gly Met Phe Ser Glu Val Leu His Gly Leu Ile Gly Arg
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 Thr Gln Arg Ser Ala Gly Val Asp Gln Asn His Pro Arg Ala Val Leu
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 Val Pro Ser Ser Leu Arg Ile Gly Ile Ile Pro Ala Gly Ser Thr Asp
 165 170 175
 Cys Val Cys Tyr Ser Thr Val Gly Thr Ser Asp Ala Glu Thr Ser Ala

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195	200	205
His His Asn Ser Thr Leu Leu Arg Tyr Ser Val Ser Leu Leu Gly Tyr		
210	215	220
Gly Phe Tyr Gly Asp Ile Ile Lys Asp Ser Glu Lys Lys Arg Trp Leu		
225	230	235
Gly Leu Ala Arg Tyr Asp Phe Ser Gly Leu Lys Thr Phe Leu Ser His		
245	250	255
His Cys Tyr Glu Gly Thr Val Ser Phe Leu Pro Ala Gln His Thr Val		
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Gly Ser Pro Arg Asp Arg Lys Pro Cys Arg Ala Gly Cys Phe Val Cys		
275	280	285
Arg Gln Ser Lys Gln Gln Leu Glu Glu Glu Gln Lys Lys Ala Leu Tyr		
290	295	300
Gly Leu Glu Ala Ala Glu Asp Val Glu Glu Trp Gln Val Val Cys Gly		
305	310	315
Lys Phe Leu Ala Ile Asn Ala Thr Asn Met Ser Cys Ala Cys Arg Arg		
325	330	335
Ser Pro Arg Gly Leu Ser Pro Ala Ala His Leu Gly Asp Gly Ser Ser		
340	345	350
Asp Leu Ile Leu Ile Arg Lys Cys Ser Arg Phe Asn Phe Leu Arg Phe		
355	360	365
Leu Ile Arg His Thr Asn Gln Gln Asp Gln Phe Asp Phe Thr Phe Val		
370	375	380
Glu Val Tyr Arg Val Lys Lys Phe Gln Phe Thr Ser Lys His Met Glu		
385	390	395
Asp Glu Asp Ser Asp Leu Lys Glu Gly Gly Lys Lys Arg Phe Gly His		
405	410	415
Ile Cys Ser Ser His Pro Ser Cys Cys Cys Thr Val Ser Asn Ser Ser		
420	425	430
Trp Asn Cys Asp Gly Glu Val Leu His Ser Pro Ala Ile Glu Val Arg		

435

440

445

Val His Cys Gln Leu Val Arg Leu Phe Ala Arg Gly Ile Glu Glu Asn
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<210> 7

<211> 522

<212> DNA

<213> Rattus sp.

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<210> 8

<211> 144

<212> PRT

<213> Rattus sp.

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 20 25 30

Leu Ile Leu Ile Arg Lys Cys Ser Arg Phe Asn Phe Leu Arg Phe Leu
 35 40 45

Ile Arg His Thr Asn Gln Glu Asp Gln Phe Gly Phe Thr Phe Val Glu
 50 55 60

Val Tyr Arg Val Lys Lys Phe Gln Phe Thr Ser Lys His Val Glu Asp
 65 70 75 80

Asp Asp Asn Asp Leu Lys Glu Leu Glu Lys Gln Lys Phe Gly Gln Ile

85

90

95

Cys Lys Asp Asn Pro Pro Cys Ala Cys Pro Thr Ser Arg Ser Ser Trp
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Asn Cys Asp Gly Glu Val Leu His Ser Pro Ala Ile Glu Val Arg Val
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His Cys Gln Leu Val Arg Leu Phe Ala Arg Gly Ile Glu Glu Glu Ser
130 135 140

<210> 9

<211> 382

<212> DNA

<213> Mus musculus

<400> 9

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<211> 79

<212> PRT

<213> Mus musculus

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35 40 45

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Cys Gln Leu Val Arg Leu Phe Ala Arg Gly Ile Glu Glu Glu Ser
65 70 75

<210> 11
<211> 326
<212> PRT
<213> Homo sapiens

<400> 11
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35 40 45

Glu Val Ile Thr Glu His Ala Asn Gln Ala Lys Glu Thr Leu Tyr Glu
50 55 60

Ile Asn Ile Asp Lys Tyr Asp Gly Ile Val Cys Val Gly Gly Asp Gly
65 70 75 80

Met Phe Ser Glu Val Leu His Gly Leu Ile Gly Arg Thr Gln Arg Ser
85 90 95

Ala Gly Val Asp Gln Asn His Pro Arg Ala Val Leu Val Pro Ser Ser
100 105 110

Leu Arg Ile Gly Ile Ile Pro Ala Gly Ser Thr Asp Cys Val Cys Tyr
115 120 125

Ser Thr Val Gly Thr Ser Asp Ala Glu Thr Ser Ala Leu His Ile Val
130 135 140

Val Gly Asp Ser Leu Ala Met Asp Val Ser Ser Val His His Asn Ser
145 150 155 160

Thr Leu Leu Arg Tyr Ser Val Ser Leu Leu Gly Tyr Gly Phe Tyr Gly
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Asp Ile Ile Lys Asp Ser Glu Lys Lys Arg Trp Leu Gly Leu Ala Arg
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Tyr Asp Phe Ser Gly Leu Lys Thr Phe Leu Ser His His Cys Tyr Glu
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Gly Thr Val Ser Phe Leu Pro Ala Gln His Thr Val Gly Ser Pro Arg
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 Asp Arg Lys Pro Cys Arg Ala Gly Cys Phe Val Cys Arg Gln Ser Lys
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<210> 12

<211> 453

<212> PRT

<213>* *Saccharomyces cerevisiae*

<400> 12

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 35 40 45

Lys Ala Lys Lys Leu Phe Met Thr Lys Ala Lys Pro Leu Leu Leu Ala
 50 55 60

Ser Arg Cys Ser Ile Glu Val Val Tyr Thr Lys Tyr Pro Gly His Ala
 65 70 75 80

Ile Glu Ile Ala Arg Glu Met Asp Ile Asp Lys Tyr Asp Thr Ile Ala

Asp Thr Ile Ala Cys Ala Ser Gly Asp Gly Ile Pro Tyr Glu Val Ile	100	105	110
Asn Gly Leu Tyr Arg Arg Pro Asp Arg Val Asp Ala Phe Asn Lys Leu	115	120	125
Ala Val Thr Gln Leu Pro Cys Gly Ser Gly Asn Ala Met Ser Ile Ser	130	135	140
Cys His Trp Thr Asn Asn Pro Ser Tyr Ala Ala Leu Cys Leu Val Lys	145	150	155
Ser Ile Glu Thr Arg Ile Asp Leu Met Cys Cys Ser Gln Pro Ser Tyr	165	170	175
Met Asn Glu Trp Pro Arg Leu Ser Phe Leu Ser Gln Thr Tyr Gly Val	180	185	190
Ile Ala Glu Ser Asp Ile Asn Thr Glu Phe Ile Arg Trp Met Gly Pro	195	200	205
Val Arg Phe Asn Leu Gly Val Ala Phe Asn Ile Ile Gln Gly Lys Lys	210	215	220
Tyr Pro Cys Glu Val Phe Val Lys Tyr Ala Ala Lys Ser Lys Lys Glu	225	230	240
Leu Lys Val His Phe Leu Glu Asn Lys Asp Lys Asn Lys Gly Cys Leu	245	250	255
Thr Phe Glu Pro Asn Pro Ser Pro Asn Ser Ser Pro Asp Leu Leu Ser	260	265	270
Lys Asn Asn Ile Asn Asn Ser Thr Lys Asp Glu Leu Ser Pro Asn Phe	275	280	285
Leu Asn Glu Asp Asn Phe Lys Leu Lys Tyr Pro Met Thr Glu Pro Val	290	295	300
Pro Arg Asp Trp Glu Lys Met Asp Ser Glu Leu Thr Asp Asn Leu Thr	305	310	315
Ile Phe Tyr Thr Gly Lys Met Pro Tyr Ile Ala Lys Asp Thr Lys Phe	325	330	335
Phe Pro Ala Ala Leu Pro Ala Asp Gly Thr Ile Asp Leu Val Ile Thr	340	345	350

Asp Ala Arg Ile Pro Val Thr Arg Met Thr Pro Ile Leu Leu Ser Leu
 355 360 365

Asp Lys Gly Ser His Val Leu Glu Pro Glu Val Ile His Ser Lys Ile
 370 375 380

Leu Ala Tyr Lys Ile Ile Pro Lys Val Glu Ser Gly Leu Phe Ser Val
 385 390 395 400

Asp Gly Glu Lys Phe Pro Leu Glu Pro Leu Gln Val Glu Ile Met Pro
 405 410 415

Met Leu Cys Lys Thr Leu Leu Arg Asn Gly Arg Tyr Ile Asp Thr Glu
 420 425 430

Phe Glu Ser Met
 435

<210> 14
 <211> 380
 <212> PRT
 <213> Schizosaccharomyces pombe

<400> 14
 Cys Trp Val Asp Phe Val Glu Asn Ser Asp Gln Phe Cys Glu Tyr Leu
 1 5 10 15

Leu Asp Val Ala Tyr Lys Gly Ile Lys Arg Ser Arg Arg Phe Ile Val
 20 25 30

Phe Ile Asn Pro His Gly Gly Lys Gly Lys Ala Lys His Ile Trp Glu
 35 40 45

Ser Glu Ala Glu Pro Val Phe Ser Ser Ala His Ser Ile Cys Glu Val
 50 55 60

Val Leu Thr Arg Arg Lys Asp His Ala Lys Ser Ile Ala Lys Asn Leu
 65 70 75 80

Asp Val Gly Ser Tyr Asp Gly Ile Leu Ser Val Gly Gly Asp Gly Leu
 85 90 95

Phe His Glu Val Ile Asn Gly Leu Gly Glu Arg Asp Asp Tyr Leu Glu
 100 105 110

Ala Phe Lys Leu Pro Val Cys Met Ile Pro Gly Gly Ser Gly Asn Ala
 115 120 125

Phe Ser Tyr Asn Ala Thr Gly Gln Leu Lys Pro Ala Leu Thr Ala Leu
130 135 140
-
Glu Ile Leu Lys Gly Arg Pro Thr Ser Phe Asp Leu Met Thr Phe Glu
145 150 155 160
Gln Lys Gly Lys Lys Ala Tyr Ser Phe Leu Thr Ala Asn Tyr Gly Ile
165 170 175
Ile Ala Asp Cys Asp Ile Gly Thr Glu Asn Trp Arg Phe Met Gly Glu
180 185 190
Asn Arg Ala Tyr Leu Gly Phe Phe Leu Arg Leu Phe Gln Lys Pro Asp
195 200 205
Trp Lys Cys Ser Ile Glu Met Asp Val Val Ser Ser Asp Arg Thr Glu
210 215 220
Ile Lys His Met Tyr Glu Lys Ser Lys Asn Leu Ala Pro Met Ser Glu
225 230 235 240
Ser Ser Asp Ser Asp Lys Thr Val Ser Thr Ser Pro Glu Ser His Leu
245 250 255
Leu Thr Phe Glu Ile Asn Asp Leu Ser Ile Phe Cys Ala Gly Leu Leu
260 265 270
Pro Tyr Ile Ala Pro Asp Ala Lys Met Phe Pro Ala Ala Ser Asn Asp
275 280 285
Asp Gly Leu Ile Asp Val Val Ile Val Tyr Ser Lys Gln Phe Arg Lys
290 295 300
Ser Leu Leu Ser Met Phe Thr Gln Leu Asp Asn Gly Gly Phe Tyr Tyr
305 310 315 320
Ser Lys His Leu Asn Tyr Tyr Lys Val Arg Ser Phe Arg Phe Thr Pro
325 330 335
Val Asn Thr Gly Lys Arg His Tyr Phe Ala Leu Asp Gly Glu Ser Tyr
340 345 350
Pro Leu Glu Pro Phe Glu Cys Arg Val Ala Pro Lys Leu Gly Thr Thr
355 360 365
Leu Ser Pro Val Ala Gly Phe Gln Leu Leu Asp Ile
370 375 380

<210> 15
 <211> 415
 <212> PRT
 <213> Caenorhabditis elegans

<400> 15
 Cys Arg Ser Asp Ala Glu Glu Asn Glu Gln Leu Thr Ser Val Ile Leu
 1 5 10 15
 Ser Arg Lys Pro Pro Pro Gln Glu Gln Cys Arg Gly Asn Leu Leu Val
 20 25 30
 Phe Ile Asn Pro Asn Ser Gly Thr Gly Lys Ser Leu Glu Thr Phe Ala
 35 40 45
 Asn Thr Val Gly Pro Lys Leu Asp Lys Ser Leu Ile Arg Tyr Glu Val
 50 55 60
 Val Val Thr Thr Gly Pro Asn His Ala Arg Asn Val Leu Met Thr Lys
 65 70 75 80
 Ala Asp Leu Gly Lys Phe Asn Gly Val Leu Ile Leu Ser Gly Asp Gly
 85 90 95
 Leu Val Phe Glu Ala Leu Asn Gly Ile Leu Cys Arg Glu Asp Ala Phe
 100 105 110
 Arg Phe Phe Pro Thr Leu Pro Ile Gly Ile Val Pro Ser Gly Ser Gly
 115 120 125
 Asn Gly Leu Leu Cys Ser Val Leu Ser Lys Tyr Gly Thr Lys Met Asn
 130 135 140
 Glu Lys Ser Val Met Glu Arg Ala Leu Glu Ile Ala Thr Ser Pro Thr
 145 150 155 160
 Ala Lys Ala Glu Ser Val Ala Leu Tyr Ser Val Lys Thr Asp Asn Gln
 165 170 175
 Ser Tyr Ala Ser Phe Leu Ser Ile Gly Trp Gly Leu Met Ala Asp Ile
 180 185 190
 Asp Ile Asp Ser Glu Lys Trp Arg Lys Ser Leu Gly His His Arg Phe
 195 200 205
 Thr Val Met Gly Phe Ile Arg Ser Cys Asn Leu Arg Ser Tyr Lys Gly

210		215		220															
Arg	Leu	Thr	Tyr	Arg	Pro	Tyr	Lys	Pro	Lys	Gly	Phe	His	Pro	Ser	Ser				
225					230			-		235					240				
Asn	Val	Phe	Ser	Val	Tyr	Glu	Lys	Thr	Thr	Gln	Gln	Arg	Ile	Asp	Asp				
				245					250					255					
Ser	Lys	Val	Lys	Thr	Asn	Gly	Ser	Val	Ser	Asp	Ser	Glu	Glu	Glu	Thr				
			260					265					270						
Met	Glu	Thr	Lys	Phe	Gln	Asn	Trp	Thr	Leu	Pro	Asp	Ser	Asp	Glu	Thr				
	275						280					285							
Leu	Ala	Val	Gly	Ser	Ser	Asp	Leu	Glu	Glu	Thr	Val	Val	Ile	Glu	Asp				
	290					295					300								
Asn	Phe	Val	Asn	Ile	Tyr	Ala	Val	Thr	Leu	Ser	His	Ile	Ala	Ala	Asp				
305					310					315					320				
Gly	Pro	Phe	Ala	Pro	Ser	Ala	Lys	Leu	Glu	Asp	Asn	Arg	Ile	His	Leu				
				325					330					335					
Ser	Tyr	Ile	Leu	Trp	Lys	Asp	Ile	Gly	Thr	Arg	Val	Asn	Ile	Ala	Lys				
			340					345					350						
Tyr	Leu	Leu	Ala	Ile	Glu	His	Glu	Thr	His	Leu	Asp	Leu	Pro	Phe	Val				
	355						360					365							
Lys	His	Val	Glu	Val	Ser	Ser	Met	Lys	Leu	Glu	Val	Ile	Ser	Glu	Gly				
	370					375					380								
Ser	His	Val	Val	Leu	Asp	Gly	Glu	Val	Val	Asp	Thr	Lys	Thr	Ile	Glu				
385					390					395					400				
Val	Ala	Ser	Thr	Lys	Asn	His	Ile	Ser	Val	Phe	Ser	Ser	Thr	Ala					
				405					410					415					